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(12) **United States Patent**
Lake et al.

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(54) **REAL-TIME ONLINE DETERMINATION OF CAUSTIC IN PROCESS SCRUBBERS USING NEAR INFRARED SPECTROSCOPY AND CHEMOMETRICS**

(58) **Field of Classification Search**

CPC B01D 2251/304; B01D 53/1412; B01D 53/1456; B01D 53/1493; B01D 53/346; (Continued)

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

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G01J 5/02 (2006.01)
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(Continued)

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ABSTRACT

The present invention is to provide processes, apparatuses, and systems for monitoring and/or controlling caustic concentrations in caustic scrubbers. In various aspects, the processes, apparatuses, and systems comprise a real-time online method for measuring the concentration of caustic in process scrubbers wherein a probe is coupled to a spectrometer; collecting absorption data with wavelength range from about 1000 to about 2000 nm. In a further aspect, this technique tracks the use and recharge of caustic in process scrubbers.

18 Claims, 7 Drawing Sheets

